2nd International Conference

# on Resilience and Sustainable Regions

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## ADDRESSING MACRO IMPACTS AND SCENARIO-BASED STRATEGIES FOR TOURISM INDUSTRY RESILIENCE

João Ferreira do Rosário (ESCS-IPL, LIACOM, CITUR), Ana Teresa Machado (ESCS-IPL, LIACOM, CITUR), Filipe Segurado Severino (ESHTE, CITUR, RESILIENCE), Teresa Costa (ESCE-IPS, RESILIENCE), Zélia Raposo Santos (ESCS-IPL, LIACOM, CITUR), Maria de Lurdes Calisto ((ESHTE, CITUR)

Shift
FRAMEWORK DE MARKETING TURÍSTICO, INTERATIVO E ORIENTADO PARA A INOVAÇÃO E SUSTENTABILIDADE

https://shiftresearch.pt

SHIFT-Sustainability-oriented, Highly interactive, and Innovation-based Framework for Tourism marketing
Research project financed by FCT – Foundation for Science and Technology, I.P.,within the scope of the project PTDC/EGE-OGE/2146/2021.
Led by the Polytechnic Institute of Setúbal (Higher School of Business Sciences) in a network with the Estoril Higher Institute for Tourism and Hotel Studies, the Polytechnic Institute of Lisbon (School of Communication and Media Studies) and the University of Algarve (Higher School of Management , Hotel and Tourism).Partnership with CITUR and Tourism of Portugal, IP.

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## Agenda

- Introduction
- Theoretical Framework
- Method
- Literature Review
- Findings-CATWOE Model
- Findings – Supply and Demand Side
- Discussion
- Conclusions
- Theoretical, Pratical & Social Implications

Project reference: PTDC/EDE-OGE/2146/2021

## Introduction

- This study examines future tourism scenarios over the next five years, focusing on climate change and digital transformation.
- It assesses key challenges and opportunities, offering strategic insights to help industry stakeholders adapt to an evolving landscape.

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## Introduction

- Tourism and Hospitality (T&H) firms are particularly vulnerable to the external environment (the pandemic is a good example). In the next few years, climate change and digital transformation will be challenges (but also opportunities), which require a transformative approach to tourism (a paradigm shift). A paradigm shift requires collective efforts.

- Even though collaborative efforts have been recognised as a source of competitive advantage in T&H, previous research has recognised that tourism marketing efforts are often made independently by tourism entrepreneurs, SMEs and other tourism stakeholders.

- As a result, it is necessary to gain a deeper comprehension of the viewpoints of tourism demand and supply with regard to collaborative efforts at the destination level in light of climate change and digital transformation

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## Theoretical Framework

- The study is grounded in scenario planning and the CATWOE framework, which are widely used in strategic management to analyse complex systems and anticipate future uncertainties.
- The research builds on existing literature to offer a robust theoretical lens for assessing long-term trends.

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## Method

- This study followed a three-phase qualitative approach:

1. Systematic Literature Review (PRISMA) – Identifies key macro factors affecting tourism.

2. Expert Interviews (Non-Tourism) – Engages 13 specialists to highlight climate change and digital transformation as key trends.

3. Tourism Expert Interviews (CATWOE Framework) – Examines industry adaptation strategies through semi-structured interviews and content analysis (NVivo software).

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## Literature Review

**Political and legal factors** (Aguinis et al., 2023; Demiralay & Kilincarslan, 2019)

- Positive: Influence in tourism development, competitiveness, infraestructures, support business and establish regulation.
- Negative: Instability and conflicts influence investments and reputation.

**Economic factors** (Badulescu et al., 2021; Duyen et al., 2022)

- Economic conditions influence tourism.
- Economic growth, structure, and exchange rate affect stakeholders.
- Relationship between economic development, income growth and tourism demand.

**Social-Cultural factors** (Dong et al., 2020; Zhuang et al, 2019)

- Positive: Encourage to explore new places, growing awareness, changes in social norms and values.
- Direct influence on quality and attractiveness.

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## Literature Review

**Technological factors** (Cadle et al., 2010; Hitt et al., 2007)

- Information technology and improvements affects tourism activity.
- Technological development leads to tourism innovation.

**Natural environment** (Buckley et al., 2017; Fossgard & Stensland, 2021)

- Resources are important to tourism, particularly the natural resources.
- Relation in tourism resource volume, nature, and value with tourism activity scale, nature, attractiveness, or seasonality.
- Problems related with pollution and waste disposal.

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## Literature Review

Identification of key factors affecting tourism on a five-year horizon, emerging trends

- Systematic literature review
- Interviews with multidisciplinary experts
- Round tables

Scenario generation

- Survey to international experts.

Scenarios formulation

- CATWOE interviews with experts in tourism.

**Digital Transformation**

**Climate change**

**Circular Economy**

**Cybercrime**

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## Findings

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Identification of key factors affecting tourism on a five-year horizon

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**Climate change**

**Digital Transformation**

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## Findings-CATWOE Model

**The Challenge of Climate Change**

| CATWOE Dimension/Point of View | Tourism Impact | Adaptation Strategies |
|---|---|---|
| Customers (Tourists) | Change in travel patterns, due to extreme weather and rising temperatures. | Shift to colder destinations, greater interest in sustainable tourism |
| Actors (Industry Stakeholders) | Destinations and companies need to adapt to the new weather conditions. | Investments in ecotourism, seasonal adjustments in operations. |
| Transformation (Industry Process) | Global warming affects traditional seasons and tourist demand. | New tourism models (e.g., off-season tourism, climate-resilient infrastructure). |
| Worldview (Overall Impact) | Climate change affects ecosystems with an impact on biodiversity and landscapes. | Sustainability policies, investments in green energy. |
| Owners (Regulators & Governments) | Need for a stronger environmental commitment in tourism policies. | Ex: Regulations that promote tourism with carbon neutral emissions. |
| Environment (External Forces) | More natural disasters, changes in landscapes and extreme weather events. | Contingency plans for climate risks, reduction of dependence on air transport. |

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## Findings-CATWOE Model

## Digital Transformation Impact

| CATWOE Dimension | Tourism Impact | Adaptation Strategies |
|---|---|---|
| Customers (Tourists) | Increased demand for real-time information and personalized experiences. | AI-based recommendations, automated booking systems. |
| Actors (Industry Stakeholders) | Need to integrate AI, automation, and digital platforms at the operational level. | Investment in AI chatbots, robotics, and intelligent prediction tools. |
| Transformation (Industry Process) | Digitalization redefines customer interaction and operational efficiency. | Augmented and Virtual Reality (AR, VR) for destination marketing, smart tourism apps. |
| Worldview (Overall Impact) | Increasing reliance on technology can replace authentic experiences. | Balancing digital innovation and the human touch in tourism services |
| Owners (Regulators & Governments) | Cybersecurity and data privacy concerns are on the rise. | Stricter digital security measures, ethical use of AI. |
| Environment (External Forces) | Growth of the "digital nomad" culture, reduction of business travel (virtual unions). | Infrastructure for remote support for "work tourism". |

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## Findings-Summary

## Summary of the Impacts of Climate Change & Digital Transformation on Tourism

| | Climate Change Impact | Digital Transformation Impact |
|---|---|---|
| Trends | Rising temperatures, extreme weather events, changing tourist seasons. | AI-based personalization, VR & AR adoption, automation in tourism. |
| Business models | Sustainable tourism, off-season travel, climate-adapted infrastructure. | Smart tourism, digital platforms, real-time bookings and AI-based services. |
| Tourist behavior | Preference for destinations with colder climates (e.g., Northern Europe, Canada); ecological tourism experiences; Preference for tour operators that implement sustainable policies. | Personalized travel experiences (AI-driven recommendations).<br>Virtual tourism as an alternative for those who cannot travel; increasing use of digital platforms for real-time bookings and changes.<br>Decline in business travel due to better virtual collaboration tools. |
| Challenges & Considerations | Environmental sustainability, climate change, infrastructure adaptation. | Over-reliance on technology, cybersecurity concerns, loss of authenticity in tourist experiences. |
| Key takeaway | Tourism companies must adapt strategies to remain competitive in a world impacted by climate change. | Digital transformation is reshaping tourism experiences, but a balance is needed between automation and physical, authentic experiences. |

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## Findings demand and supply *(Scenario – 5-year horizon)*

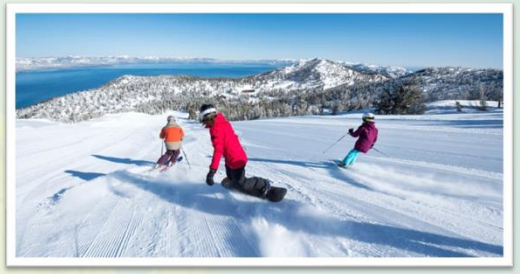
**Climate Change**

Demand side:

- Sazonality change
- Changes on destination selection
- Last-chance destinations
- Air travel reduction (regulation)

Supply side:

- Sazonality change
- Stakeholders' adaptation
- New opportunities/experiences
- New energy sources
- Contingency plans



(Lake Tahoe, USA)

**Climate change increasingly unpredictable and prone to exacerbate global warming.**

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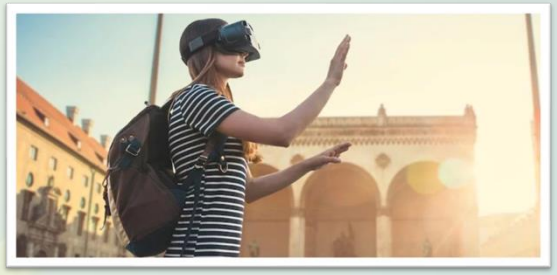
## Findings demand and supply
*(Scenario – 5-year horizon)*

**Dominant role of Artificial intelligence (AI), Virtual Reality (VR), Augmented Reality (AR), Metaverse and Robotization.**



### Digital Transformation

Demand side:

- Digital Platforms increasing trend
- Real-time digital interaction
- Information accessibility
- Interest in face-to-face service
- AI important for demand
- Decrease in business travel
- Increased connectivity

Supply side:

- Supplementary tool
- Investments in AI, AR & VR
- Enhanced decision-making capacities
- Process simplification
- Product customization
- Innovation / New experiences
- Virtual promotion
- Easier forecasting
- Partnership establishment

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## Findings-Demand Side

- Concerns: security, political issues, cultural and social sustainability.
- Travel decisions: monetary considerations, cultural hospitable societies and destinations travel amenities.
- Internet, opinion-sharing websites, and word-of-mouth influencing the decisions-making.
- Collaboration: transparency, recommendations and bundle activities.
- Future: digital transformation and the expansion and facilitation of air travel, as well as the simplification of travel procedures and reduction of travel costs.
- Environmental sustainability: not the primary factor influencing visitors' travel decisions. Can bring Eco-fatigue

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## Findings-Supply Side

- Collaboration: complex but ensures advancement = favorable outcomes.
- It must consist of a coordinated effort toward an integrated objective
- Raises consciousness regarding sustainability concerns.
- Investments in digital transformation are crucial.
- Enables a change of perspectives with the removal of opposition to digital transformation.
- By using more sustainable tools and strategies, technology enables process control.

**Climate change can be influenced by the implementation of technological advancements that promote environmental sustainability.**

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## Discussion

**Scenarios for the future** ✖ **Demand-side** = **Digital Transformation** ✓ | **Climate change** ✗ → Possible solution: **Product driven behaviour**

**Scenarios for the future** ✖ **Supply-side** = **Digital Transformation** → **Climate change mitigation** ✓

**Collaboration**

Although digital transformation has major future implications, how sustainability is prioritized in climate change mitigation on tourist demand is unclear.

However, the tourism supply must collaborate and incorporate intrinsic measures into their products and services to influence sustainability on demand-side.

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## Conclusions

- Collaboration is essential for sustainable tourism and yields many benefits in sustainability.
- Stakeholders must manage challenges in a dynamic environment impacted by digital transformation and climate change.
- Collaboration success depends on commitment, mutual goals, social values, and facilitative factors like public support, ethical agreements, and resource sharing.
- ”Eco-fatigue" and digital advancements generate complex trade-offs between environmental and technological concerns.
- Through collaboration, the tourism industry can overcome these challenges and thrive.

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## Theoretical, Pratical & Social Implications

- **Theoretical**

Enhances scenario planning in tourism by incorporating non-tourism expert insights and the CATWOE framework.

- **Practical**

Helps policymakers and tourism operators create adaptive strategies for sustainable tourism and digital innovation.

- **Social**

Highlights the impact of climate-driven migration and digital nomadism on global tourism, emphasizing the need for inclusive and sustainable policies.

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# Tourism collaboration for sustainability in face of climate change and digital transformation

João Ferreira do Rosário
(jrosario@escs.ipl.pt)

João Ferreira do Rosário (ESCS-IPL, LIACOM, CITUR), Ana Teresa Machado (ESCS-IPL, LIACOM, CITUR), Filipe Segurado Severino (ESHTE, CITUR, RESILIENCE), Teresa Costa (ESCE-IPS, RESILIENCE) Zélia Raposo Santos (ESCS-IPL, LIACOM, CITUR), Maria de Lurdes Calisto ((ESHTE, CITUR)

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## Thank you

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